

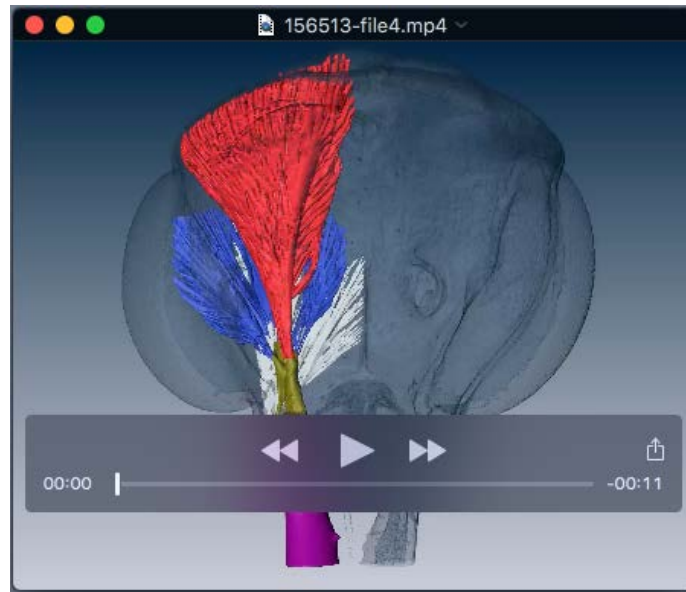
SUPPLEMENTARY INFORMATION



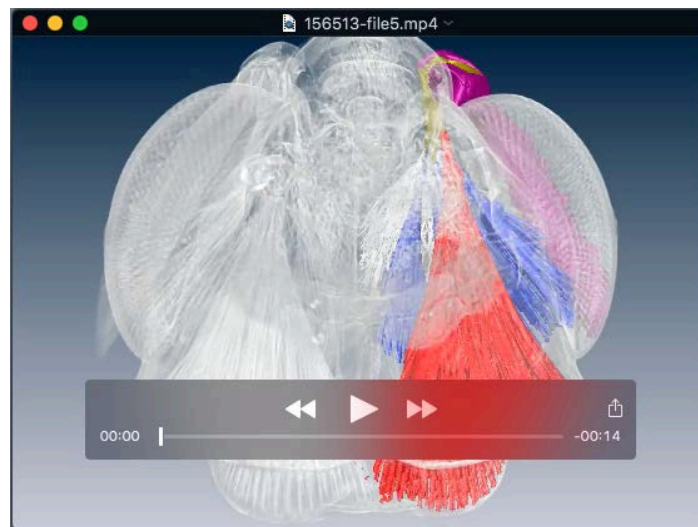
SUPPLEMENTARY MOVIE 1. High-speed video of *Myrmoteras* mandible strike. Mandible strike recorded at $1000 \text{ frames s}^{-1}$ to visualize deformation of the head during the loading phase of a strike.



SUPPLEMENTARY MOVIE 2. High-speed video of *Myrmoteras* mandible strike. Mandible strike recorded at $6 \times 10^4 \text{ frames s}^{-1}$ to completely resolve mandible motion during a strike.



SUPPLEMENTARY MOVIE 3. Video of surface rendering of mouthpart apparatus in open position. Surface rendering from microCT data illustrating the special arrangement of the muscles, apodemes and cuticular elements of the mandible apparatus. Colors are as indicated in Fig. 3.



SUPPLEMENTARY MOVIE 4. Video of surface rendering of mouthpart apparatus in closed position. Surface rendering from microCT data illustrating the special arrangement of the muscles, apodemes and cuticular elements of the mandible apparatus. Colors are as indicated in Fig. 3.